

REMARKS

This paper is presented in response to the Office Action. By this paper, claims 1, 5, 10, 11 (i.e., the version of claim 11 previously submitted in *independent* form), 11 (i.e., the version of claim 11 previously submitted in *dependent* form), 12-13, 15-16 and 18-25 are amended, and claim 26 is added. Claims 1-24 and 26 are now pending in light of the aforementioned amendments.

Reconsideration of the application is respectfully requested in view of the following remarks. For the convenience and reference of the Examiner, the remarks are presented in the order in which the corresponding issues were raised in the Office Action.

I. General Considerations

Applicant notes that the amendments and remarks presented herein have been made merely to clarify the claimed embodiments from elements purported by the Examiner to be taught by the cited references. Such amendments and remarks, or a lack of remarks, are not intended to constitute, and should not be construed as, an acquiescence, on the part of the Applicant: as to the purported teachings or prior art status of the cited references; as to the characterization of the cited references advanced by the Examiner; or as to any other assertions, allegations or characterizations made by the Examiner at any time in this case. Applicant reserves the right to challenge the purported teaching and asserted prior art status of the cited references at any appropriate time.

In addition, the amendments and remarks herein do not constitute, nor are they intended to be, an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed herein are presented solely by way of example.

II. Claim Rejections under 35 U.S.C. § 112, ¶ 2

The Examiner has rejected claims 1-24 under 35 U.S.C. § 112, ¶ 2, alleging that those claims are “indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” Applicant disagrees with the contentions of the Examiner and submits that for at least the reasons outlined below, the rejection of claims 1-24 should be withdrawn.

a. claim 1

The Examiner has rejected claim 1 on the basis that claim 1 purportedly “fails to define a ‘stabilizing material’.” Inasmuch the Examiner has not stated specifically why the purported failure of

claim 1 to “define” a “stabilizing material” is believed to render claim 1 indefinite, Applicant is unclear as to the specific nature of the concern of the Examiner. However, it appears that the Examiner may be improperly equating breadth of claim language with indefiniteness, inasmuch as “stabilizing material” can embrace a large universe of materials. In any case, the examination guidelines make clear that breadth of a claim is not to be equated with indefiniteness. See *MPEP* § 2173.04 (citing *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971)). *Emphasis added*.

Moreover, Applicant notes that definiteness of claim language must be analyzed, not in a vacuum, but in light of, among other things, the content of the application disclosure. See *MPEP* § 2173.02. In this regard, Applicant respectfully directs the attention of the Examiner to page 3, lines 1-17 of the application, where a generalized discussion is provided regarding various aspects of “stabilizing” materials such as are recited in claim 1.

In view of the foregoing, Applicant respectfully submits that the rejection of claim 1 is not well taken and should be withdrawn.

b. claim 19

The Examiner has rejected claim 19 (as renumbered by the Examiner) on the ground that claim 19, as written, depends from itself. Applicant submits that in view of the claim amendments herein, the rejection has been overcome and should be withdrawn.

c. claim 21

The Examiner has rejected claim 21 (as renumbered by the Examiner) on the ground that the claim 21 limitation “the first and second mirrors” lacks an antecedent basis. Applicant submits that in view of the claim amendments herein, the rejection has been overcome and should be withdrawn.

III. Obviousness Type Double Patenting Rejection

In the Office Action, the Examiner has rejected claims 1-19 under the judicially created doctrine of obviousness-type double patenting in view of US 6,603,784 (the “’784 Patent”). While Applicant disagrees with the contention of the Examiner that the claims of the present application are obvious over the claims of the ’784 Patent, Applicant has submitted herewith a terminal disclaimer relative to the ’784 Patent. In view of such terminal disclaimer, Applicant submits that the rejection of claims 1-19 under the judicially created doctrine of obviousness-type double patenting has been overcome and should be withdrawn.

IV. Rejection of Claims 1-6, 11-14 and 18-21 Under 35 U.S.C. §102

Applicant respectfully notes that a claim is anticipated under 35 U.S.C. § 102(a), (b), or (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. *Manual of Patent Examining Procedure ("MPEP") § 2131.*

A. rejections based upon US 6,148,015 to Jacquet et al.

The Examiner has rejected claims 1-2 and 19-21 under 35 U.S.C. § 102(a) as being anticipated by US 6,148,015 to Jacquet et al. ("*Jacquet*"). Applicant disagrees with the contentions of the Examiner however and submits that for at least the reasons outlined below, the rejection of claims 1-2 and 19-21 should be withdrawn.

i. claims 1-2

For example, claim 1 clearly recites "an active layer in a semiconductor light emitting device ..." *Emphasis added.* In contrast, *Jacquet* discloses that the "second processing segment H2" discussed at col. 5, lines 15-27 cited by the Examiner "constitutes a receiver photodiode." *Col. 4, lines 36-37. Emphasis added.* Applicant respectfully submits that a "light emitting device" such as is recited in claim 1 is materially different from the "receiver photodiode" structure H2 disclosed in *Jacquet*.

Moreover, claim 1 specifies that the claimed "quantum well" includes "layers of a semiconductor alloy under mechanical stress interspersed with layers of stabilizing material." *Emphasis added.* However, the passage of *Jacquet* cited by the Examiner does not disclose a *quantum well* that includes such an interspersed layering scheme.

In view of the foregoing, Applicant respectfully submits that the Examiner has not established that *Jacquet* anticipates claim 1, at least because the Examiner has not established that every element as set forth in claim 1 is found in *Jacquet*, and because the Examiner has not established that the identical invention is shown in as complete detail as is contained in claim 1. Applicant thus submits that the rejection of claim 1, as well as the rejection of corresponding dependent claim 2, must be withdrawn.

ii. claims 19-21

Similar to claim 1, claim 19 (claim 18, as herein amended) is directed to "An active layer in a semiconductor laser comprising ... quantum well including semiconductor alloy layers under mechanical stress and stabilizing material layers, wherein the stabilizing material layers are interspersed between the

semiconductor alloy layers and serve as mechanical stabilizers for the semiconductor alloy layers.” *Emphasis added.* As indicated in the discussion of claim 1 at IV.A.i. above however, the Examiner has not established that *Jacquet* or any other reference teaches or suggests a quantum well that incorporates such a layering scheme. Nor has the Examiner established that *Jacquet* or any other reference discloses a laser incorporating such a quantum well. For at least these reasons, Applicant thus respectfully submits that the rejection of claims 19-21 should be withdrawn.

B. rejections based upon US 5,987,047 to Valster et al.

The Examiner has rejected claims 1-6, 11-14 and 18-19 under 35 U.S.C. § 102(a) as being anticipated by US 5,987,047 to Valster et al. (“*Valster*”). Applicant disagrees with the contentions of the Examiner however and submits that for at least the reasons outlined below, the rejection of claims 1-6, 11-14 and 18-19 should be withdrawn.

i. claims 1-6

With regard to the rejection of claims 1-6, Examiner has stated that “*Valster* discloses ... an active layer 2 in a semiconductor light emitting device comprising at least one quantum well 2A including layers of a semiconductor alloy ... under mechanical stress with layers 4 and 4A of stabilizing material ...” *Emphasis added.* In this regard, it was noted at IV.A.i above that claim 1 recites a “quantum well” that includes “layers of a semiconductor alloy under mechanical stress interspersed with layers of stabilizing material.” *Emphasis added.*

In contrast, Figure 2 of *Valster* does not indicate that the “quantum well 2A” cited by the Examiner *includes any* layering scheme, much less the layering scheme recited in claim 1. In fact, and notwithstanding the contentions of the Examiner, the quantum well 2A illustrated in Figures 1-2 of *Valster* does not appear to include a layering scheme as claim 1 requires but appears instead to be part of a layering scheme. That is, rather than incorporating a layering scheme, as is the case with the quantum well recited in claim 1, it would appear instead from Figure 2 of *Valster* that the “quantum well 2A” is, itself, but one element of a layered active region 2, where that active region 2 further includes the layers 4 and 4A which the Examiner has incorrectly characterized as comprising elements of the “quantum well 2A.”

In view of the foregoing, Applicant respectfully submits that the Examiner has not established that *Valster* anticipates claim 1, at least because the Examiner has not established that every element as set forth in claim 1 is found in *Valster*, and because the Examiner has not established that the identical invention

is shown in as complete detail as is contained in claim 1. Applicant thus submits that the rejection of claim 1, as well as the rejection of corresponding dependent claims 2-6, must be withdrawn.

ii. claims 11-14

As amended herein, and similar to claim 1 discussed above at **IV.B.i**, claim 11 recites in part “A semiconductor light emitting device having an active layer comprised of more than one quantum well, each quantum well including layers of a semiconductor alloy under mechanical stress interspersed with layers of a stabilizing material.” *Emphasis added*. As indicated in the discussion of claim 1 at **IV.B.i** above however, the Examiner has not established that *Valster* or any other reference teaches or suggests a quantum well that incorporates such a layering scheme. For at least this reason, Applicant thus respectfully submits that the rejection of claims 11-14 should be withdrawn.

iii. claims 18-19

Similar to claim 1 discussed above at **IV.B.i**, claim 18 recites in part “the at least one quantum well including semiconductor alloy layers under mechanical stress and stabilizing material layers, wherein the stabilizing material layers are interspersed between the semiconductor alloy layers.” *Emphasis added*. As indicated in the discussion of claim 1 at **IV.B.i** above however, the Examiner has not established that *Valster* or any other reference teaches or suggests a quantum well that incorporates such a layering scheme. For at least this reason, Applicant thus respectfully submits that the rejection of claims 18-19 should be withdrawn.

V. Rejection of Claims 7-10, 14-15 and 20-22 Under 35 U.S.C. §103(a)

Applicant respectfully notes at the outset that in order to establish a *prima facie* case of obviousness, it is the burden of the Examiner to demonstrate that three criteria are met: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; second, there must be a reasonable expectation of success; and third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP § 2143*.

Turning now to the rejections, the Examiner has rejected claims 7-10, 14-15 and 20-22 under 35 U.S.C. §103(a) as being unpatentable over *Valster* in view of US 5,021,360 to Melman (“*Melman*”). Applicant disagrees with the contentions of the Examiner however and submits that for at least the reasons outlined below, the rejection of claims 7-10, 14-15 and 20-22 should be withdrawn.

A. claims 7-10

By virtue of their dependence from claim 1, claims 7-10 each require, among other things, a “quantum well” that includes “layers of a semiconductor alloy under mechanical stress interspersed with layers of stabilizing material.” *Emphasis added.* As noted in the discussion of claim 1 at **IV.B** above however, the Examiner has not established that *Valster* or any other reference, either alone or in combination, teaches or suggests such a quantum well in combination with the other limitations of the rejected claims.

In view of the foregoing, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness with respect to claims 7-10, at least because even if the references are combined in the purportedly obvious fashion, the resulting combination fails to include all the limitations of the rejected claims. Applicant accordingly further submits that the rejection of claims 7-10 should be withdrawn.

B. claims 14-15

By virtue of their dependence from claim 11, claims 14-15 each require, among other things, “A semiconductor light emitting device having an active layer comprised of more than one quantum well, each quantum well including layers of a semiconductor alloy under mechanical stress interspersed with layers of a stabilizing material.” *Emphasis added.* As noted in the discussion of claim 11 at **IV.B** above however, the Examiner has not established that *Valster* or any other reference, either alone or in combination, teaches or suggests, in combination with the other limitations of the rejected claims, a quantum well having such a layering scheme.

In view of the foregoing, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness with respect to claims 14-15, at least because even if the references are combined in the purportedly obvious fashion, the resulting combination fails to include all the limitations of the rejected claims. Applicant accordingly further submits that the rejection of claims 14-15 should be withdrawn.

C. claims 20-22

By virtue of their dependence from claim 18 (formerly claim 19), claims 20-22 each require, among other things “the at least one quantum well including semiconductor alloy layers under mechanical stress and stabilizing material layers, wherein the stabilizing material layers are interspersed between the semiconductor alloy layers.” *Emphasis added.* As noted in the discussion of claim 18 at **IV.B** above

however, the Examiner has not established that *Valster* or any other reference, either alone or in combination, teaches or suggests, in combination with the other limitations of the rejected claims, a quantum well having such a layering scheme.

In view of the foregoing, Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness with respect to claims 20-22, at least because even if the references are combined in the purportedly obvious fashion, the resulting combination fails to include all the limitations of the rejected claims. Applicant accordingly further submits that the rejection of claims 20-22 should be withdrawn.

VI. Amendments to Independent Claims 1 and 11

Applicant notes that while claim 1, as filed, meets the statutory requirements for clarity and definiteness, that claim has nonetheless been amended herein to further the understanding of the Examiner as to the claimed subject matter. Particularly, claim 1 has been amended herein to recite “An active layer in a semiconductor light emitting device, the active layer comprising at least one quantum well, the quantum well including layers of a semiconductor alloy under mechanical stress interspersed with layers of stabilizing material.” *Emphasis added*. Support for this amendment can be found, for example, at Figure 3 of the specification.

Similarly, claim 11 as filed meets the statutory requirements for clarity and definiteness. Nonetheless, that claim has been amended herein to further the understanding of the Examiner as to the claimed subject matter. Particularly, claim 11 has been amended herein to recite “each quantum well including layers of a semiconductor alloy under mechanical stress interspersed with layers of a stabilizing material.” *Emphasis added*. Support for this amendment can be found, for example, at Figure 3 of the specification.

Applicant notes that the amendments herein to claims 1 and 11 have not been made in response to any rejection or objection posed by the Examiner, but rather simply to further the understanding of the Examiner. In this regard, it should be noted that Applicant has broad discretion to choose and modify the language of a claim and, moreover, various patentable expressions of comparable claim scope lie within the bounds of such discretion. Because the amendments herein to claims 1 and 11 fall within the bounds of that discretion, those amendments are not related to patentability of those respective claims.

VII. New Claim 26

By this paper, Applicant has added new dependent claim 26. Inasmuch as claim 26 depends from claim 1, believed to be in allowable condition for at least the reasons outlined herein, new claim 26 is likewise believed to be in allowable condition. Support for new claim 26 can be found in the specification at page 8, line 14, for example.

VIII. Docket Number

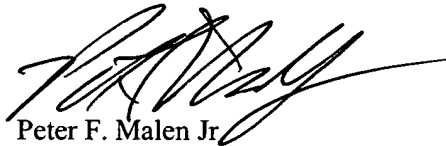
Applicant respectfully notes that the Office Action incorrectly references Attorney Docket No. "M40-17234." Pursuant to the Change of Attorney Docket Number filed in this case on July 7, 2005, the correct docket number for this case is 15436.434.3.1. Applicant thus respectfully requests that all applicable USPTO records be updated accordingly, and Applicant further requests that all further communications from the USPTO reference docket number 15436.434.3.1.

CONCLUSION

In view of the remarks submitted herein, Applicant respectfully submits that each of the pending claims 1-24 and 26 is in condition for immediate allowance. Therefore, reconsideration of the rejections is requested and allowance of those claims is respectfully solicited. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 17th day of October, 2005.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Peter F. Malen Jr.', written over a horizontal line.

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